THE NAVAL SAFETY CENTER'S AVIATION MAGAZINE

approach

April 2002

Smoke in the Groove

Welcome to Naval Aviation

The Adventure Was Over

approach

The Naval Safety Center's Aviation Magazine

April 2002 **Volume 47 No. 4**
On the Cover VS-33 Screwbirds fire a Zuni Rocket over Chocolate Mountain Bombing Range near El Centro, CA. Photo by Cdr. Chris Buhlmann, USNR
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Mission Statement

Mishaps waste our time and resources. They take our Sailors, Marines and civilian employees away from their units and workplaces and put them in hospitals, wheelchairs and coffins. Mishaps ruin equipment and weapons. They diminish our readiness.

This magazine's goal is to help make sure that personnel can devote their time and energy to the mission, and that any losses are due to enemy action, not to our own errors, shortcuts or failure to manage risk.

We believe there is only one way to do any task: the way that follows the rules and takes precautions against hazards. Combat is hazardous enough; the time to learn to do a job right is before combat starts.

April Thanks

Thanks for helping with this issue...

LCdr. Greg Walls, VFA-41
LCdr. Bill Miller, HS-3
Lt. Dan Freedman, HSL-49
Lt. Jenny Tinjum, HC-11
LCdr. Obra Gray, VS-24
AMH1 James Bare, VFA-87
LCdr. Tim Kuehhas, VAQ-142
Lt. James Meadows, HSL-48
AM1 Richard Wood, VQ-3

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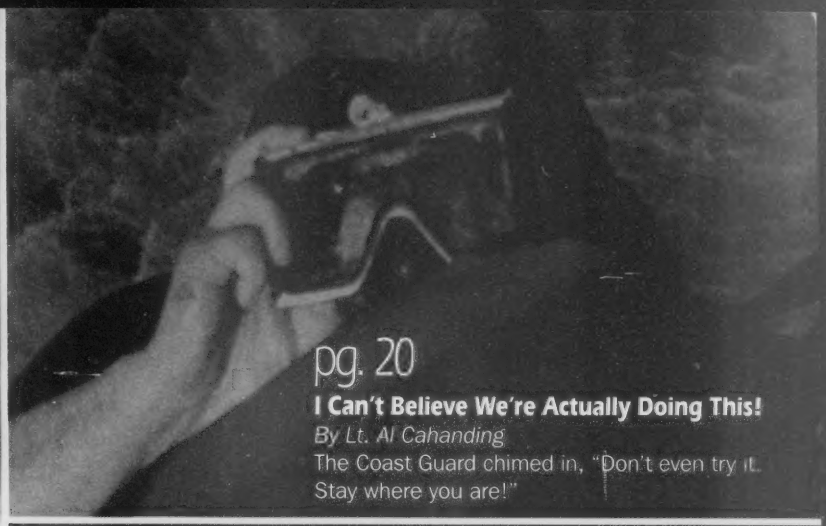

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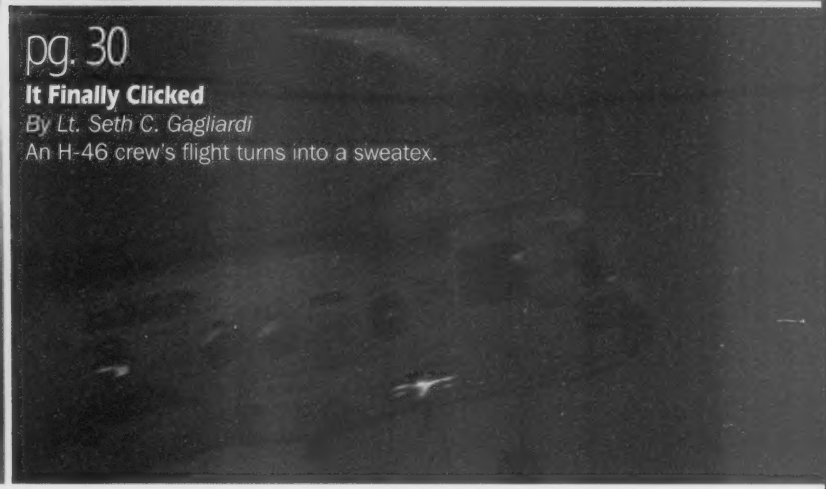
I Can't Believe We're Actually Doing This!

By Lt. Al Cahanding

The Coast Guard chimed in, "Don't even try it. Stay where you are!"



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FLYING ON

By Lt. Mark E. Crowe

As a nugget who had checked into the squadron just before SFARP and having finished Air Wing Fallon, I didn't feel intimidated by a night division, self-escort strike into Navy Dare. It was, however, the first time I had done a self-escort strike on goggles.

We rendezvoused and transited to the working area. I was in a close, visual formation, so I didn't have any problems maintaining my position. That all ended halfway to the IP on ingress. We had a single, heavy group that maneuvered at range. Of course, as Dash 4, I was the only person who saw one bandit spit out in the opposite direction from the other three bandits. Also, as Dash 4 and a new guy, I didn't say anything: I thought I had to have been seeing things. About 10 seconds later, which felt like an eternity, I decided it was up to me to save the division, so I peeled off to the right to take care of the lone bandit.

Of course, at this point, I had lost radar contact. I made a 90-degree turn, held that for 15 seconds, found nothing, then rejoined the flight. That's when things began to get interesting. This was the first time in the flight I really needed to use my air-to-air TACAN. By the time I was going the same direction as the rest of the flight, my TACAN showed me nine miles away. This sounded reasonable to me, so I continued at 400-plus knots to close the distance. I also cut the corner at the initial point to close it more. By the time I released my ordnance, I was only five miles in trail. There were several lights ahead of me, but I had no concept of distance, since I was flying on goggles.

I continued to drive at Dash 3 to rejoin, now at 450 knots. I was confident my TACAN was giving good information because I had double-checked to make sure the correct channel was dialed in. Unfortunately, I was so intent on catching up to my lead that I had forgotten one of the rules they teach you early in pilot training: Never bull's-eye your lead. In other words, to prevent a midair collision, never leave your nose directly on the aircraft you're trying to join. I was so task-saturated I had totally ignored that rule. As I saw the distance rapidly tick down to inside three miles, I looked down in the cockpit for a few seconds for some reason. When I looked up again, I was inside a quarter-mile behind my lead with about 200 knots of closure, headed directly for him. I aggressively maneuvered the aircraft to avoid hitting my lead, passing 300 feet to the right of his aircraft.

Once I had passed Dash 3 and given a quick, "Sorry about that" call on our tactical frequency, I pulled the throttles back to idle and took a deep breath, or five. I proceeded to lose sight again and slowed to 230 knots. My head definitely was not in the game. Not wanting to be anywhere near my lead, I was not able to rejoin the flight until they were about 20 miles from the field. I finally rejoined and came in for an uneventful landing.

After I finished bashing myself to my lead, I took a few minutes to think about just how close I had come to driving up my lead's tailpipes. With the amount of closure that existed, if I had kept my head in the cockpit another three seconds, there would have been a midair. I definitely wouldn't have survived, and I probably would have killed my lead.

Another lesson taught in the FRS deals with mission-crosscheck times. The longest mission-crosscheck times are three to five seconds for day-combat spread, meaning you can have your head in the cockpit for that amount of time before looking outside at your lead. I had my head down in the cockpit for at least seven to 10 seconds to get that close to my lead without being able to

GOGGLES

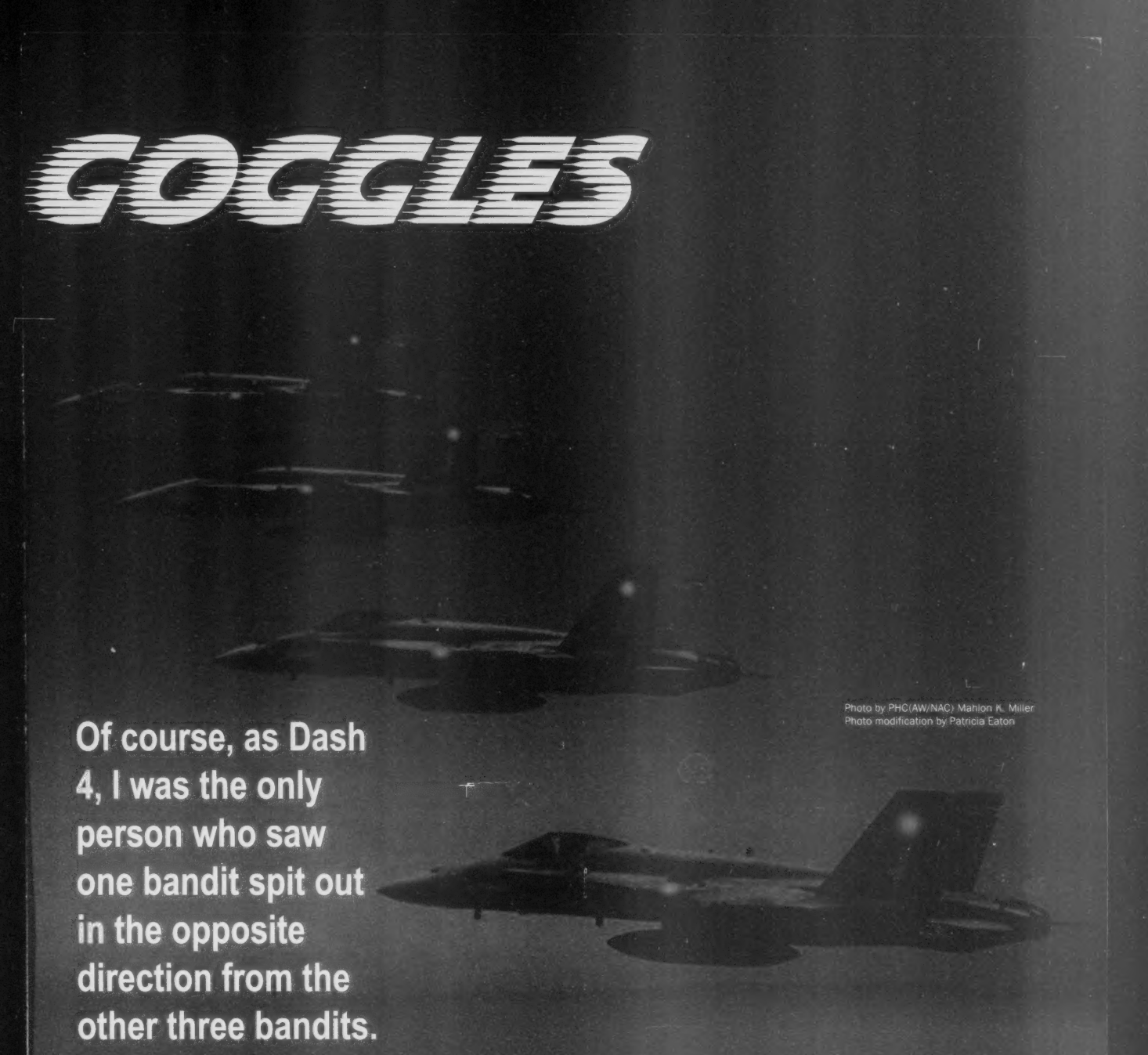


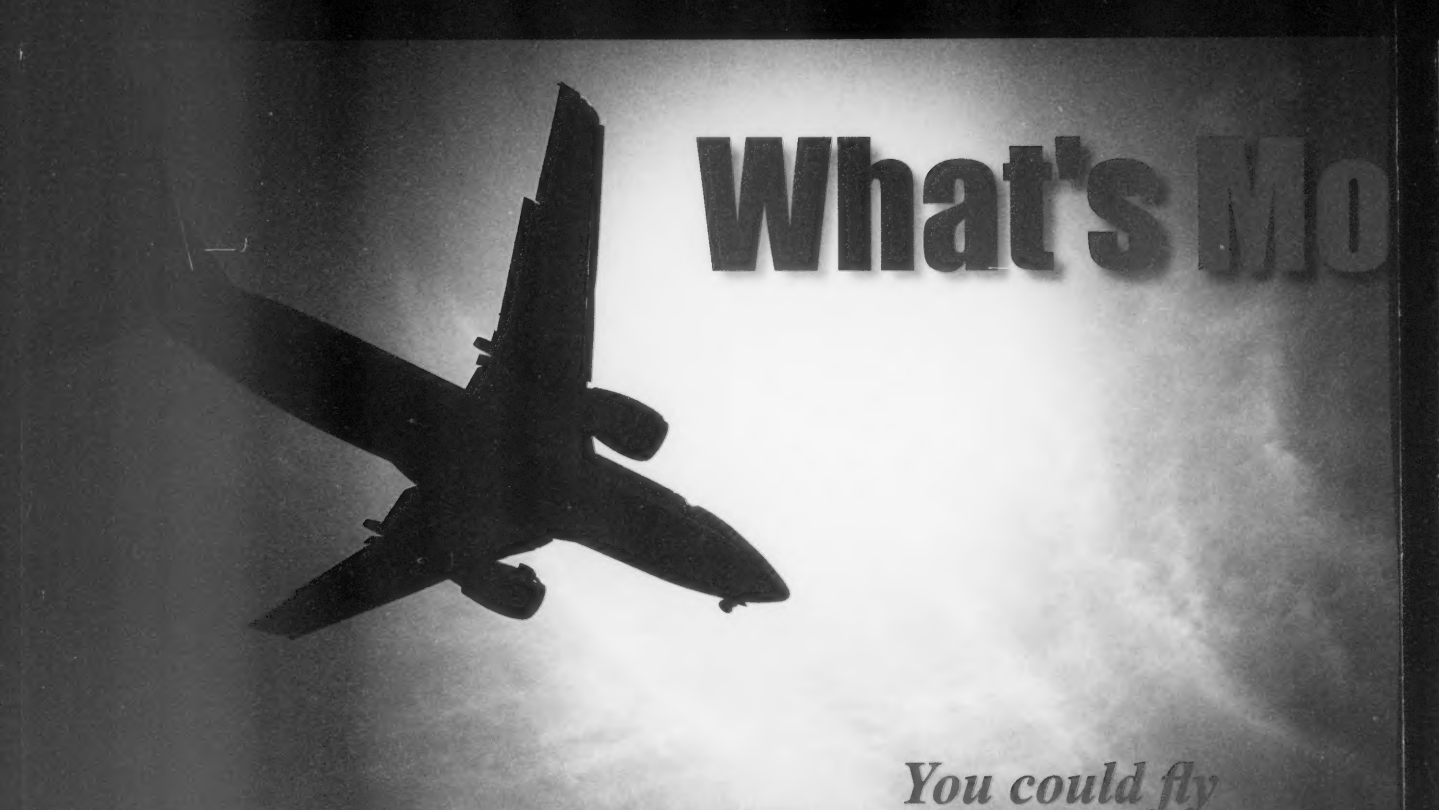
Photo by PHC(AW/NAC) Mahlon K. Miller
Photo modification by Patricia Eaton

Of course, as Dash 4, I was the only person who saw one bandit spit out in the opposite direction from the other three bandits.

discern his aircraft. An additional NVG consideration, which helped aggravate the situation, is that a bright-point light source, such as the whitetail position light and the glow of the tailpipes, can easily wash out the aircraft outline within extremely close ranges. Immediately after my close call and my subsequent losing sight of my lead for the second time, I descended into the bandit's altitude block, another bad decision. I was not able to compartmentalize and make a good airborne decision until several minutes later.

After I landed, I compared the printed kneeboard card flight lead had provided to the one I had made with only the pertinent information. I had switched the TACAN channels so I was getting range to the lead section and not to my lead. That one mistake, and subsequent bad headwork, had almost cost the Navy a $35-million aircraft and me, my life.

Lt. Crowe flies with VFA-87.



What's Mo

By Dr. Mike Borowsky and Dr. John Gaynor

You could fly one flight per day for more than 11,000 years without incident.

Four hundred and fifty people died in 12 fatal U.S air-transport accidents from 1996 to 2000. Meanwhile, 209,117 people, including 30,189 pedestrians and bicyclists, died in 186,474 fatal traffic crashes. In 2000 alone, 37,409 crashes killed 41,821 people.

That's 114 people, per day, who died on the highways—the equivalent of a large commercial aircraft crash every other day!

In the same five-year period, there were 50,141,570 aircraft departures. These flights totaled 31,535,345,000 miles and 77,682,791 flight hours. So your chances of being on a flight that crashes and kills people would be 1 in 4,178,464. You could fly one flight per day for more than 11,000 years without incident.

Let's say you're taking a vacation 600 miles from home. If you fly, your chance of being in a fatal crash is 1 in 2,089,232 (Don't forget, it's a round trip, so there are two flights, if they both are direct). Your chances of being in a fatal aircraft accident during your trip is extremely small—about the same as winning the Virginia lottery in seven plays.

Because you're afraid to fly, you decide to drive that 1,200-mile round trip. Based on the 25,492 driver fatalities and the 2.7 trillion vehicle miles traveled per year, the likelihood you will die on the trip is 1 in 88,263. If you drive, your chances of dying in a crash during your trip are about 24 times higher than if you go by airplane. In 20 years of driving in a motor vehicle, at 20,000 miles a year, you have a 1-in-265 chance of dying.

If, on second thought, you decide to fly on your trip, should you fly via commercial airline or in a Navy or Marine air transport? From 1996 to 2000, U.S. air transport accidents killed 447 aircraft occupants. The fatal-accident rates were 0.024 fatal accidents per 100,000 departures and 0.015 per 100,000 flight hours. However, there were no fatal C-9 or C-130 mishaps during fiscal

re Dangerous?

years 1981 to 2002 (through 14 November), in which there were 781,442 aircraft departures that flew 2,003,030 hours.

The C-2, C-12, and C-20 aircraft are more comparable to civilian-commuter air carriers, which have higher fatality rates than the large air carriers we've been discussing. From 1996 to 2000, commuter air carriers had 12 fatal accidents in 7,432,247 aircraft departures that flew 5,095,285 flight hours. The fatal accident rates are 0.161 and 0.236 per 100,000 aircraft departures and per 100,000 flight hours, respectively. The C-2, C-12, and C-20 flights from 1981 to 2002 (through 14 November) had two fatal mishaps in 815,956 aircraft departures that flew 1,457,307 flight hours. This results in fatal-accident rates of 0.25 per 100,000 aircraft departures and 0.14 per 100,000 flight hours.

Bottom line: First choice, fly commercial transport or in a C-9 or C-130. Second choice, flip a coin to decide between civilian-commuter-air carrier and C-2, C-12, or C-20.

Let's stretch the bounds of reason and say you want to take your trip in a fighter or attack aircraft, a helicopter or a trainer. Here are the stats for FY97-01. Fatal-mishap rates are the numbers of flight and flight-related mishaps that involved at least one fatality per 100,000 aircraft departures and per 100,000 flight hours.

Fighter-attack: 26 fatal mishaps; 1,372,402 flights; 2,007,354 flight hours; 1.89, 1.30.

Helicopter: 16 fatal mishaps; 943,412 flights; 1,995,670 flight hours; 1.70, 0.80.

Trainer: 12 fatal mishaps; 928,558 flights; 1,545,756 flight hours; 1.29, 0.78.

Bottom line: Stick to air transport.

Dr. Borowsky is the department head, and Dr. Gaynor is a mathematical statistician, in the Statistics and Mathematics Department, Naval Safety Center.

Smoke in the Groove

By Lt. Timothy McDonald

It was October in the Arabian Sea. Unlike the two-hour Operation Enduring Freedom (OEF) mission I'd flown previously during the dark, moonless night, this late morning, add-on day flight was a single-cycle hop and the final event for the day. I was a nugget pilot approaching six months of cruise experience. My rightseater was a mission commander and the operations officer.

After the catapult shot, we climbed, assumed station profile, and passed mission fuel to strike aircraft returning from combat missions over Afghanistan. The tanking mission went well, and we decided to pass a couple thousand pounds of fuel to my wingman before returning overhead for a Case I recovery.

During the fuel transfer, my wingman reported seeing sparks coming from the environmental-control system (ECS) exhaust port. My COTAC and I suspected an electrical problem but we had no any cockpit indications to confirm our theory. We continued and planned to report the incident to maintenance after landing. After all, we were only five minutes away from a "99 Charlie" call from the boss.

After hearing "99 Charlie," my wingman and I pushed from the stack and headed into the carrier-break pattern. There still were no adverse cockpit indications relating to the sparks my wingman had observed earlier, so we continued into the normal Case I pattern. As we approached the carrier initial, my COTAC and I experienced an increase in cockpit temperature. I casually looked at him and asked him to adjust the air conditioning. With the air conditioning set at full cold, the temperature kept rising. I now was starting to feel uncomfortable but was reassured we would be safely on deck within a couple of minutes.

As we approached the 180, the intensity of the heat was nearly unbearable, and my COTAC and I started to smell smoke. As we commenced the approach, a cloud of smoke billowed forward from the avionics tunnel. My COTAC glanced aft before he calmly faced forward and started to recite safety of flight back-up calls (airspeed, lineup, AOA) for the pass.

After the ball call, a burning-wire smell filled the cockpit, which I immediately associated with an electrical fire. By the in-close position, the smoke was so thick it started to obstruct my view of the ball. At this point, all my efforts were devoted to flying the best pass of my naval career.

After catching the 4-wire, smoke completely filled the cockpit. My COTAC told the tower of a possible electrical fire, while visibility in the cockpit was reduced to zero. My eyes started to burn and breathing was difficult. I strapped on my oxygen mask and secured all electrical busses. My COTAC ordered us to safe our ejection seats and we began to release our Koch fittings.

As I headed for the door, I faced the reality that I could not see how to depart the aircraft. Luckily, I'd remembered the dreaded helo-dunker

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training I had received in Pensacola as a flight student and grabbed key reference points along the interior of the aircraft. Within seconds, I had located the latch and opened the door.

Coughing and drenched with sweat, my COTAC and I exited the aircraft and stood in the landing area as we watched fire and crash crews enter our aircraft. Because of the amount of smoke we had encountered, I was certain the fire was only seconds away from engulfing the entire aircraft.

When the fire and crash crew exited, they said there was no fire in the aircraft. As I stood in the landing area, dazed for a couple of minutes, I tried to figure out how firemen could report not seeing a fire.

Our ECS turbine had failed. As a result, bleed air bypassed a heat exchanger and was pumped directly into the cockpit from both engines. This explained the increase in temperature we felt during the final phase of flight. As the temperature rose, soot and dirt in the environmental-control-system plumbing, along with oil from the turbine assembly, began to smolder and was responsible for the smoke.

In just a few short moments, I realized how quickly a routine tanker mission could evolve into a possible Class A mishap. In reality, all we needed to do was turn off the air conditioning, turn on the auxiliary vent, and dump cabin pressurization. Damage to the aircraft was miniscule. But because of the sparks reported earlier by our wingman, we became fixated on an electrical malfunction or fire. A new turbine was installed, and the aircraft flew another OEF mission later that evening.

Lt. McDonald flies with VS-24.

As we approached the 180, the intensity of the heat was nearly unbearable, and my COTAC and I started to smell smoke

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Smoke in the Groove

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ORM Corner

Why Was I So Trusting?

By Lt. Ingrid Müller

We were in the Northern Arabian Gulf, flying our daily, middle-of-the-night SSC and MIO mission. We arrived on station, identified the contacts in the area, reviewed the Hellfire checklist, and began our continuous-circle search for suspicious contacts. Mostly though, we kept busy and stayed awake by telling each other stories.

The pilot, my OinC, had just finished telling a crazy story about the time he almost crashed an aircraft in his 2P days. Back when there weren't daily flight briefs, ORM, preflights, CRM, etc. I mean, way back in the olden days.

After looking at him, and realizing just how old he really was, I started to think about all the checks and balances we have today to prevent those near-misses. I thought, regardless of all these checks and balances, I never would make a decision to put me in that kind of danger. Hmmm. . .but there was that time back in flight school before we implemented ORM. I guess flying with instructors was so safe, we didn't need ORM.

It was my turn to tell the rest of the crew a story. It happened in T-34s, at Corpus Christi, Texas. I was a scared little ensign who believed all my instructors were gods and knew everything there was to know about flying. I trusted them wholeheartedly. I usually trusted few people, but flying was so foreign and intimidating to me, I needed to believe the other person in the cockpit really knew what they were doing.

I was in the visual and instrument navigation flight (VNAV and INAV) syllabus in intermediates phase, that stage in the flight program where I wasn't a scheduling priority. Each day, I would wait for an instructor to pick me for a flight. There were few instructors, and they were too busy getting students through primary. However, one fateful day my old on-wing returned.

He had been assigned a new on-wing but had just finished delivering a ready-room down and sent his new protégé home. He decided to pick me up for a VNAV. Did I mention earlier this guy swore at me continuously throughout our flights together? He was a jerk, but I trusted him.

He decided we would fly to Houston, have dinner, and fly back. The weather forecaster told us a huge line of thunderstorms was moving in from the west, and it would hit us on our return flight. My instructor decided it would not hit us.

I thought, "Well, he's been doing this for years, so he must know." Of course, that was utter stupidity on my part. I don't remember his telling me he majored in meteorology in school, so how would he know more than the forecaster? I trusted him.

We arrived in Houston and called safe-on-deck to our squadron. We should have checked the weather again, anticipating the arrival of a storm, but instead, we took an hour to eat. This decision was made so matter-of-factly by the instructor; I didn't foresee any trouble.

We checked the weather on our return to the airport and found it was still rolling in. So he decided we'd do an INAV back, and I figured, OK, no big deal. However it did mess up my training syllabus. It was going to be tough to

ORM Corner

Please send your questions, comments or recommendations to Ted Wirginis or to Capt. Denis M. Faherty, Director Operational Risk Management.

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Photo composite by Patricia Eaton

I never would make a decision to put me in that kind of danger.

get a single VNAV and a single INAV flight scheduled again. I'd worry about it later. I gave no thought to the flight ahead.

We filed a flight plan and took off. Halfway to Corpus, the weather turned bad. First we were flying airways, and it still was clear, then clouds rolled in. But, hey, I had completed BIs: I just focused on the instruments.

It suddenly wasn't just a matter of being on instruments; we started getting wind shears and horrible turbulence. Lightning was all around the aircraft. The plane wouldn't stay steady. My instructor told me I'd done a good job, and he was giving me credit for the flight, but he would fly the rest of the way back. No problem I thought, and the plane was all his.

As we approached home, the weather progressively got worse. We heard on the radios that our field was closed. Great! Now we had to go to a civilian international airport, and quickly, because they probably were about to close. Why did my instructor keep banking to 60 degrees left and right? It was like he read my mind. "I'm not banking this way on purpose; it's the wind shears. I have vertigo. You have the controls," he blurts out.

Ahhh! I took the controls, while thinking, "If he has vertigo, how am I going to make it

through this?" I was a year away from my instrument rating. The wind shears were bad, but I just concentrated on the instruments ahead of me—when I could focus on them. The plane was all over the place, shaking so much it was tough to see the gauges. But I hung on.

We miraculously made progress toward the airport, and, after some gut-wrenching moments, my instructor was able to take the controls again. We made it to the airport in one piece. We landed, shut down and secured the aircraft. I didn't have any idea of what just had happened. I just was extremely frustrated because my car was parked at the other airfield.

The next day, I told other students about what had happened, and they agreed it was a bad flight, but nobody really comprehended what happened. I just only realized it, four years later, when I was telling this story to my boss in the middle of the night.

Why had I been so trusting? I should have said, "No thanks, I don't want to fly in this weather; I don't think it's a good idea. Let's do it tomorrow." But I didn't. Instructors taught us to speak up about safety no matter what rank the other person is, but I just didn't realize the severity of the situation.

I had gone through flight school in Corpus Christi in the summertime, and the storms were the first I had seen since arriving. I also trusted my instructor completely. I have no idea why; I was just so inexperienced at the time, and I thought everyone knew more. I've learned to speak up when something is questionable. That's what ORM is all about.

ORM is a process that works. It's for salty aviators as well as those still wet behind the ears. It's for everybody, all the time, and it shouldn't take a sea story to remind you to use it. My old on-wing would be the first to tell you he's capable of killing someone.

Are you?

Lt. Müller flies with HSL-48.

I Want to Be a Navy Pilot

By a fifth grader

I want to be a Navy pilot when I grow up because it's fun and easy to do.

Pilots don't need much school, they just have to learn numbers so they can read instruments.

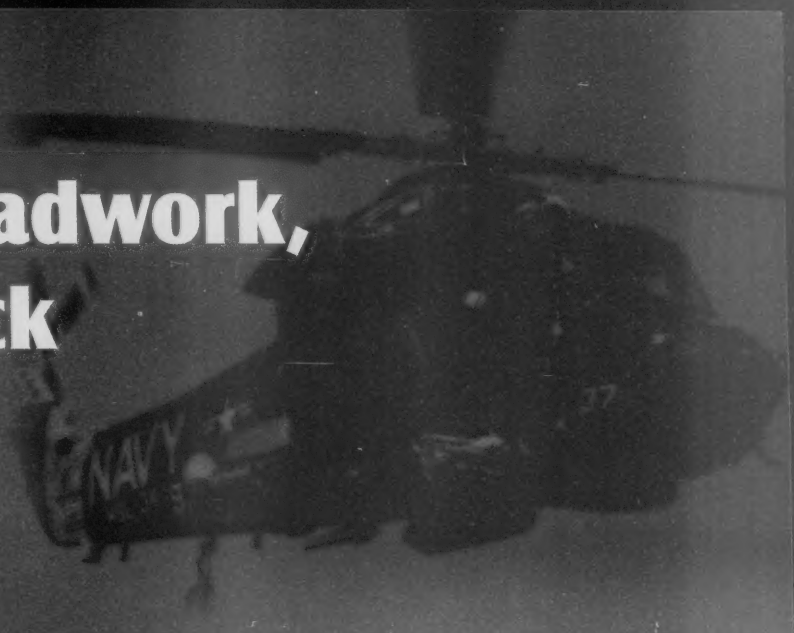
I guess they should be able to read maps so they can find their way if they are lost.

Pilots should be brave so they won't be scared if it's foggy and they can't see. If a wing or a motor falls off, they should stay calm so they'll know what to do.

Pilots need to have good eyes so they can see through clouds and they can't be afraid of lightning or thunder because they are closer to them than we are.

The salary pilots make is another thing I like; they make more money than they can spend. This is because most people think airplane flying is dangerous, except pilots don't, because they know how easy it is.

Below in Headwork, Above in Luck



By Lt. Dave Davis

It was dark, 0100. I was wired, wide-awake and straight and level. I was in my rack as all Sea Sprite H2Ps should be. Lying there tossing and turning, I couldn't ignore the thought of my OinC complaining about how the HACs and H2Ps haven't submitted any safety articles. Yeah, I know that's not what a Sailor usually thinks about while in his rack. Nonetheless, it was on my mind, and I couldn't shake it. As my thoughts wandered through the million or so poor decisions I have made and how luck has bailed me out on so many occasions, I came across an incident that could have cost me my life and quite possibly the HAC his papers.

It was 10 years back when I was an AW2 in the mighty SH-2F, with 750 hours or so under my belt. You know I had plenty of luck just to be in the air that long in the Sea Sprite. We had been flying SSC missions in and out of the Arabian Gulf. One evening, we were tasked with the dusk patrol. Eventually, boredom overcame the whole crew. As we tried to decide how to liven up the monotony of the dull mission, the other crewman and I came up with the idea that it would be a great time to take a little swim. I said, "Great! I'll go first." As I undressed down to my boxers, I thought how cool it was going to be to tell everyone I had gone swimming hundreds of miles from land.

The pilots started the approach. As I sat in the door waiting for the crewman to give me the three taps for "Jump, jump, jump," I scanned the ocean for sharks. The crewman gave me the jump signal, but my sixth sense told me to wave it off. I told my partner to hold and give me a second to check one more time for sharks and those things you look for before you exit a perfectly good helicopter. Finally convinced this was a good idea, I was ready. The pilots made another approach, and the crewman gave me two taps. I anticipated the third tap, but I didn't jump because at that moment the aircraft jerked hard left, then right. My partner quickly grabbed me by the waist and pulled me in the door before I could jump. As we climbed, I put on my flight gear and hooked up to the ICS to find out we had lost all hydraulic pressure to the flight controls. Yes, fortunately, the SH-2F could fly without hydraulic boost.

When landing back at the ship, we shut down and did our postflight inspection. There was hydraulic fluid all over the left side of the helicopter. We also found one of the main-hydraulic lines had ruptured. If I had jumped a second early or on the first pass, the hydraulic system would have failed with me in the water, and I would have had no way to get back onboard the helicopter because the hoist ran on hydraulic power. If the system had failed just as I was jumping, I might have been pitched overboard and injured.

Hmm…all for a chance to swim in bath water filled with sea snakes.

As I sit out here in the same part of the world, I am preparing for my HAC board and have to ask myself, "What would I do now if I was the HAC and my two AWs asked if they could do something brilliant like take a dip?"

I know what my answer would be.

Lt. Davis flies with HSL-48.

Photo-composite by Patricia Eaton

Welcome to Naval Aviation

By Ltjg. Brandon Scott

I'd always heard the fleet stories from salty training-command instructors about how bad it can get flying around the ship, but I never believed it was much different from flying around the field. I always thought they were embellishing the stories to get us students to take training seriously. I can't tell you how many times during those instrument simulators that I heard the phrase, "Someday you are going to be behind the ship, at night, in a terrible storm, and will have to fly the best approach of your life to get aboard. There isn't going to be anyone with you to pimp you to do this or that."

I always thought, "Yeah, yeah, yeah. I've flown in bad weather before; how much different can it be?"

So, there I was, a nugget in a Hornet squadron on my first at-sea period. It was the second week of COMPTUEX, and I still was getting familiar with flying around the ship. My flight that day was an ADEX (air-defense exercise) mission with the skipper. We still were in the presence phase of the exercise, and our mission was to intercept and to escort the bad guys. Before starting the mission, we were scheduled to receive gas from a KC-135 overhead the ship. Getting gas from a KC-135 is never much fun, and the skipper suggested I put my drop tanks in stop transfer before takeoff. Hornet drop tanks can take longer to fill than internal tanks. With the drop tanks in stop transfer, all the fuel would be sent to the internal tanks, meaning less time behind the tanker.

My takeoff was delayed for minor problems, and the skipper launched first. After launch, the skipper called me on our aux frequency to say the tanker wasn't on station. That was a big relief. I reached down and flipped the tank-transfer switch to normal transfer, as I headed to our cap station.

Just as I flipped the switch, all my displays blinked, and cautions started popping up. I had problems with fuel pressure and invalid fuel-tank quantities. These problems got my attention because we now were on an hour-and-a-half cycle with no tanker gas. Around the ship, as I was learning, you always are concerned about fuel, even in a double-bubble Hornet.

As I headed toward my cap station to join the skipper, I saw my fuel indicators were frozen. "Not too big a deal," I told myself, "I'll just tell the skipper what I have once we join. After all, we just launched, and I have plenty of gas." I checked my bit page and saw the

cause of the problems was a signal-data-computer (SDC) failure.

I was 15 miles away from joining when the skipper committed on the first bogey group. Well, the middle of an intercept is no time to talk on aux frequency, and I didn't feel the fuel cautions were a pressing issue, so I decided to keep quiet until the intercept was over. I finally joined on the skipper after chasing him through a few broken cloud layers, and we rendezvoused on the bogeys. We were hanging out behind the bogeys waiting for instructions, so I told the skipper what I had. Our controller told us to break off the escort, and he vectored us to get gas from an S-3. While fueling from the Viking, I mentioned to the skipper that I couldn't tell how much gas was received. He decided we should knock it off and head to the ship. The problem was my drop tanks still indicated full, and I had no way to know if they were transferring. The ship controller considered this info and decided it would be best to have me divert to Roosevelt Roads, Puerto Rico.

"Divert? Don't they know I'm a nugget? Oh well, so much for an easy flight," I thought. I dug the approach plates out of my nav bag. I eventually landed safely and wondered when I should go back to the ship.

After calling the ready room, I found out the squadron had sent another jet with a spare SDC. The plan was to replace the bad one and return to the ship that night. Upon arriving at Roosevelt Roads, the pilot who had flown in said the weather near the ship was getting bad, and flight operations were cancelled for the night. If we didn't get back soon, we would be spending the night on land.

The idea of spending the night in Puerto Rico didn't sound too bad to me, when compared to flying back to the ship at night in a thunderstorm, but the decision wasn't up to me. It didn't take long to change the SDC, and we were on our way.

We launched as singles, so we wouldn't have to fly in bad weather as a flight. As I flew off into the pitch-black night and got tossed around by some turbulence, I started to remember those stories from my training-command instructors.

Eventually, we contacted the ship, and they gave us a descent to 1,200 feet. That sounded great to me. We'd be on deck in a few minutes. When I was 30 miles away, I decided to dump down to max-trap fuel weight. I just had reached for the switch when I heard, "Ninety-nine, all aircraft max conserve. Hold overhead mother, max conserve!"

I thought, "What? I just came down out of that stuff, and I certainly don't want to go back into it and hold!" As we climbed back into the storm, we had moderate-to-severe turbulence with driving rain. Although both aircraft tried, it became apparent there wasn't a good place to hold around the ship. The rain was so loud I hardly could hear the radios and we saw lightning every few seconds.

After what seemed like an eternity, the ship finally cleared us for our approach. The other aircraft went first and was not able to call the ball until one-half mile. That didn't sound good, so I thought about flying "the best approach of my life."

When it came my turn, I chased line-up all the way, and I broke out well right. When I went low on the correction to centerline, the LSOs had enough, and I got the "Eat at Joe's" waveoff lights. "So much for the best approach of my life," I thought. My second approach was much better and I got aboard safely. I just was glad to be on deck and proudly walked across the flight deck in the pouring rain. When I got to the ready room, the skipper was standing there with his hand out. As I shook his hand, he said, "Welcome to naval aviation!"

As for lessons learned, I finally appreciated all those boring instrument simulators, which I dreaded so much in the training command. I also was glad I had looked

The rain was so loud I hardly could hear the radios and we saw lightning every few seconds.

over the diverts before needing them. A few days later, a door-3 fastener came loose and shot down my right intake, FODing the engine. I had to bring the jet back aboard single engine.

In one week, during my first at-sea period, I had diverted to an unfamiliar airfield, made a single-engine landing at the ship, and had flown back aboard at night in one of those notorious thunderstorms you hear about in the training command. One piece of advice for those about to become nuggets: Don't relax because you finally made it to the fleet; the real test is about to begin!

Lt(jg). Scott flies with VFA-86.

Fire Is Not the Ti

By LCdr. Dave Lobdell

Photo-composite by Patricia Eaton

The flight was briefed as an SFWT BFM warm-up off the boat during a good-deal, one-hour cycle—a snapshot drill, a defensive, an offensive, and a high-aspect set. The weather was great; unfortunately, I was fighting one of the more skilled JOs. I'd have to work a little harder.

Launch, rendezvous and tac admin were completed. During level-off checks, fuel transfer was normal, and all switches checked good, although the right side appeared to be transferring faster than the left side. We went into the snapshot drill and set up for the defensive engagement; now was the time to teach the youngsters something about fighting the Tomcat. We set up for the perch engagement, and I reversed my turn as the defensive fighter, the ranges were counted down, and then came the "Fight's on" call.

Coming out of burner, I shot chaff and flares, and went into a hard-break turn. As the JO went nose high, I unloaded, rolled into the ditch, and re-staged afterburner. Pulling through 60-degrees nose low, I heard a "Knock it off" call. "Wow," I thought, "That ditch really must have watered his eyes, or he is having some aircraft problems and doesn't want to be humiliated by the role reversal I was about to administer."

Then came the call, "You're on fire, check your dumps off." I leveled my wings, pulled to the horizon, and pulled both throttles to idle. I confirmed the dump switch was off and then

aining Objective

secured the fuel-transfer switch, thinking it was simply venting fuel lit off by the afterburner. My wingman confirmed fuel was coming from the vent mast or the dump. I looked in the mirrors and saw a large fire near my tail on the left side; this day was not going well.

My wingman said it looked like it was coming from the left motor. I went through the boldface—throttle idle, airsource off. Then the fire light illuminated. The left throttle was secured, and the left fuel-shutoff handle was pulled. As we were climbing and decelerating, the fire light went out after 15 seconds. I checked the fire-detection system, and it checked good. The fire appeared to be out.

We turned toward and contacted the ship, told them of our situation, and requested the dreaded emergency pull forward. After 2,000 hours in the F-14, I prided myself on knowing the PCL cold and went through most of the checks before DCAG (my RIO) broke out the checklist, but this is where DCAG's 40 Tomcat-hours paid off. He went through every checklist in painful detail as if we were on a RAG simulator event, and he actually caught me on a couple of steps I did out of order but was able to fix.

Our wingman said the fire appeared to be smoldering at the base of the left-vertical stab. We still were flying, and I was busy dumping down and trying to negotiate with CATCC for ACLS on the straight-in.

While dumping down, I tried to balance the fuel tapes and to get the fuel on the left side over to the right side so I could use it. But, of course, max-trap weight was reached with 5,000 pounds on the left side and 2,000 on the right side. In the meantime, with the ship fighting me one circle, I gave up on the ACLS. I then set up on a two-mile arc, waiting for the ship to stop turning, when our wingman reported the fire definitely was out.

Switching up tower, we checked in and DCAG gave paddles our approach speed, which I had calculated off the top of my head. Paddles disagreed (because I was wrong), and DCAG found the correct approach speed for our single-engine configuration. I just kept my turn in and flew the slightly fast approach. At three-quarters of a mile, we called the ball, and at one-half a mile, paddles called for the boat to stop turning; they would take the wind as is.

I kept in my angle of bank, flew slightly fast, and listened intently for paddles. At the call, "You're overpowered," I flew the best 1-wire of my life, went to full burner at touchdown, and set the hook as only a Tomcat can do.

> Then came the call, "You're on fire, check your dumps off."

Our post-flight inspection showed extensive fire damage to the left rudder and rudder actuator, and significant charring and damage to the base of the left vertical stabilizer. After the maintenance investigation, no cause for the fire ever was determined. Maintainers ran the engines on the test stand. They checked the hydraulic system, fuel system, and the fuel cells. But nothing significant was found. Only two small leaks were found, but nothing that could have caused the volume and size of fire encountered in flight. The jet was repaired and has flown numerous sorties with no problems.

As with any close call, it was disturbing that we found no clear cause of the fire.

LCdr. Lobdell flew with VF-41.

Slip Sl-i-ding Away

By Lt. Bennett Goff

The crew had finished an EP-3 dispersal at Hill AFB, filled with training (also known as skiing on the 2002 Olympic slopes) and good night life.

It was a Saturday morning and the airfield did not open until 10 a.m. We coordinated with operations to takeoff at 10:30, which gave us time to file and get a weather brief.

Although we had low ceilings and snowfall during our stay, the morning of our departure dawned with only scattered clouds at 25,000 feet. Strong winds were coming over the mountains, heading 080 degrees at 30 knots, gusting to 40. They were forecast to remain high throughout the next 18 hours. The runway heading was 160 degrees, which made for quite a crosswind. We tuned in ATIS and heard the runway was dry, and the temperature was a cool 28 F. Because of the high-pressure altitude (Hill AFB is at 3,800 feet MSL) and crosswind, critical field length (CFL) at our gross weight of 295,000 was around 10,000 feet, with 13,500 feet available. Maximum crosswind for takeoff would be 33 knots. Factor in that Hill AFB sits at the foot of large mountains to the east. With no other activity on the field, we planned to start engines, to taxi for departure, wait to wait for the winds to come within limits. With the 3P in the left seat and me in the right, we ran checklists and taxied to the active. All taxiways were clear, but there was loose, blowing snow.

As we neared the hold-short, we were cleared to position and hold. After a short delay for IFR release, we were cleared for takeoff, with winds at our limit of 33 knots. The throttles were stood up to 50 percent, and the airplane slowly rolled as the engines spun up at the high altitude. Our

speed was only five to seven knots as the 3P called, "Set takeoff thrust." The No. 1 engine spooled up slower than the other three, which required a small nosewheel-steering input to maintain centerline. I estimate our speed was 15 to 20 knots when the steering input was made. The airplane began to shudder, and we heard a loud noise in the cockpit as the nosewheel began to slide. The plane began to weathervane into the wind, and we started sliding well right of centerline, with the plane's tail coming around and the nose turning 30 to 40 degrees to the left of runway heading.

The 3P tried to pull the throttles to idle, but the FE still had his hand in place after pushing up the throttles. He called, "Get them back," just before abort was called. Training took over, and the throttles quickly came to idle, and the 3P got the speed brakes up. We still were sliding to the right, and all I could think was, "Oh, ****, we're going into the mud." By the time the speed brakes were up, both of us were on the brakes, and from the right seat I deployed the thrust reversers, trying anything to stop the slide. I even was trying to steer with the yoke, but I'm not sure how effective that was. The reversers brought the plane to a stop, and we came to rest 20 to 25 feet right of centerline, a few thousand feet down the runway.

I cancelled takeoff clearance with tower and requested to taxi clear. We slowly began to taxi and had no problems clearing the runway. Once clear of the active, we let tower know of our directional-control problems and requested base ops run the runway again to confirm the runway-condition reading (RCR). Fifteen minutes later, the answer came back. The first 5,000 feet of the runway was RCR 7, braking action poor, with the remaining 8,500 feet, RCR 23.

We taxied and shut down. When we reentered base ops, I asked the airfield manager what had happened with the initial RCR reading. His sheepish reply was that blowing snow had frozen on the runway in the 45 minutes between their initial field sweep and our attempted takeoff.

Yeah, thanks. The winds were forecast to remain strong and gusty throughout the day and having to use an RCR of 5 put us well beyond crosswind and CFL limits. We coordinated with OPCON to remain another night and take off the following day with more agreeable winds.

Aviators rely on many people outside of the crew for information to keep us safe and enable us to do our mission. But when it comes to the end of the day, it is our lives, our jet, and our responsibility.

Lt. Goff flies with VQ-3.

Photo composition by Allan Amen

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Lt. Goff flies with VQ-3.

Photo composition by Allan Amen

By Cdr. Mark Darrah

As I began the training track for my squadron XO-CO tour, I felt my aviation experience would hold up well to the challenges ahead. I had completed sea tours as a JO, FRS instructor, super JO, and department head, gathering experiences as an officer and an aviator in billets designed to prepare me for aviation command. I knew how critical safety would be to a successful command tour, and I felt prepared to deal with any situation. How wrong could I be?

I found out just after I took command of the squadron, shortly before a major training detachment. The excitement of the moment overshadowed attention I should have given to how we were doing in the safety business. My sense was that we had a solid program and everyone understood my desire to continue improving it. But things happen in tactical aviation that are hard to foresee. I first realized this when we had to make a section, high-speed abort.

The Adventure Was Over

EA-6B photo by AN Stan Parker
Photo-composite by Patricia Eaton

One day, our section was scheduled to depart home base, proceed to the local MOA, join on a KC-135, MARSA with four different squadrons, day tank, detach then conduct HARM training. We then would then rejoin on the KC-135 for night tanking and depart the area as a section for multiple, night approaches at home base. To make it more exciting, our nugget pilot was scheduled as the event's wingman. The weather was excellent, and everyone was comfortable with the brief and expectations. ATIS reported the bird-hazard condition as "green."

We took the runway, and the lead pilot ran up the section. Sitting in the back left seat, I could not see our wingman, but that was about to change quickly. My pilot called, "Both engines good, no lights, off the peg, 80 knots, off nosewheel steering, high speed, everything is looking good...aww $#*&! Bird!" His expletive at the end of the list was one of the things you never want to hear from junior pilots (the others are, "Hey, watch this!", "I didn't know that switch worked like that," and "Cool, if you close your eyes, it doesn't feel like we're moving").

The front-seat ECMO called, "What?", because he had his eye on Dash 2.

The pilot said, "$#*&, it's an eagle! Aborting!" Time compression immediately kicked in. I looked at the airspeed indicator when the abort was called and saw we were right at maximum abort speed and below maximum brake speed as the throttles went to idle. In my peripheral vision, I saw a large, dark object pass extremely close to the canopy. In fact, after things settled down, I realized I had seen every detail of the eagle as it passed over me.

It registered in my mind that our wingman was still in my vision to the right, which shouldn't be possible since we were aborting. We had briefed there would be no sympathetic aborts for the section. At that instant, I heard several voices on our base frequency saying, "Continue, continue, continue!" My mind was racing: Who was calling continue, why was I hearing it on base frequency, why was he still there, and had we actually hit the bird? Our wingman disappeared quickly as he went to MRT and accelerated.

It was my turn to say something. "Did he get off?" I asked. "Is he airborne?" The positive response by ECMO-1 eased my concern for Dash 2, but our own situation remained questionable;

In my peripheral vision, I saw a large, dark object pass extremely close to the canopy.

we did not have much runway left, and we still were moving along at a high speed. As if on cue, our pilot said he had the aircraft under control, and I felt the brakes begin to take hold. As we cleared the runway, I realized the entire event started and ended in a matter of seconds. The front-seat crew discussed our options, and they were certain we had not hit the bird. The only uncertainty that remained was the status of our brakes after the high-speed abort.

As we stopped at the entrance to the line for our hot-brake checks, our plane captain pointed to our left mainmount. Our left, main-fuse plugs had melted and the tire had deflated. Our adventure was over. We shut down and walked to maintenance.

Real-world lessons are the best training. In this case, we made decisions based on NATOPS. We managed the risks to minimize emergencies. We were able to act when unexpected, unbriefed, and nonstandard events occurred.

Cdr. Darrah is the commanding officer of VAQ-142.

I Can't Believe We're

By Lt. Al Cahanding

It was battle group work-ups and another long flight spent identifying orange forces near the southern tip of San Clemente Island. Launch was at 1700 for a day-into-night, 3.5-hour hop. We found the bad guys within the first 20 minutes. Our tasking then became minimal, so we worked on quals to keep the flight interesting. Two hours into the flight, we headed southwest of San Clemente to let our aircrewman practice rigging tankers with NVGs. Suddenly, we got a radio call that would interest any helo crew.

"Red Stinger One Zero Seven, we have word of a real-world emergency. A sailboat with two survivors has run aground at these coordinates...," the ASTAC calmly informed us.

My copilot quickly punched in the latitude and longitude, and we turned toward the position, 40 nautical miles away. The coordinates were the northernmost tip of San Clemente, but the most direct route would bring us through an operating area that was currently "hot" with the air wing dropping live ordnance.

We contacted FACSFAC, let them know we were inbound to the scene, and requested an update. Then, we calculated our bingo fuel and knocked out a SAR checklist. Since NAF San Clemente was closed, FACSFAC coordinated fuel with the ODO in case we needed it. We decided to skirt the eastern side of the operating area and San Clemente Island while contacting the San Diego Coast Guard SAR coordinator.

San Diego Coast Guard told us one of their rigid-hull-inflatable boats (RHIBs) and a Navy torpedo retriever were 15 minutes away, so we assumed we would be SAR assist. Right before marking on top of datum, we noticed what looked like a flashlight waving in circles. The survivors were up on the Coast Guard freq, and I asked if they were shining the light. They said that they were. We left 700 feet for 200 feet, and my aircrewman put on the NVGs to keep the survivors and ground in sight.

We told the Coast Guard we could remain on station for 20 minutes—enough time for the two rescue vehicles to get on station and make the rescue, and still leave us with enough fuel to bingo back to our ship. They asked if we could shine our searchlight on the survivors, but our aircraft was configured for NVGs, and all we could use were the forward-hover lights, which do not provide enough focused light. The Coast Guard RHIB approached from the south, but because of the terrain, they could not see the grounded vessel. We vectored them around the Castle Rock jetty where they finally picked up a visual.

The grounded vessel was being tossed around as it took the raging surf and stiff wind head on. The jagged rocks, shallow water, and underlying reef made things difficult for the 18-foot, motorized fishing vessel—a little too difficult, as it turned out. When the RHIB rounded Castle Rock, the crew obviously was surprised by what they saw.

"RS One Zero Seven, the surf, rocks and reef are too treacherous for us to get in there. Do you have a rescue swimmer on board?" they asked.

"That's a negative, we only have a hoist operator in the back, stand by," I answered.

A million things went through my mind in a matter of seconds. As a relatively new HAC with a very junior crew, I was thinking about how we might make this rescue. I felt like I was in my HAC board again—options, options, options. What could I do to save these people while minimizing risks? I radioed the survivors and asked if they could get higher on the rocks and to stable ground.

A voice replied, "I probably can get on the rocks, but it's dark, and I don't know where to go."

Just then the Coast Guard chimed in, "Don't even try it. I'm familiar with the terrain, and it's too unstable. Stay where you are!"

The two rescue vessels were unable to get to the survivors, the survivors couldn't climb to

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Actually Doing This!

safety, and I didn't have a rescue swimmer to hook the survivors to the hoist. In the meantime, the survivors were getting bounced around a boat that was sure to sink soon.

I asked the survivors, "Are you familiar with a rescue strop?"

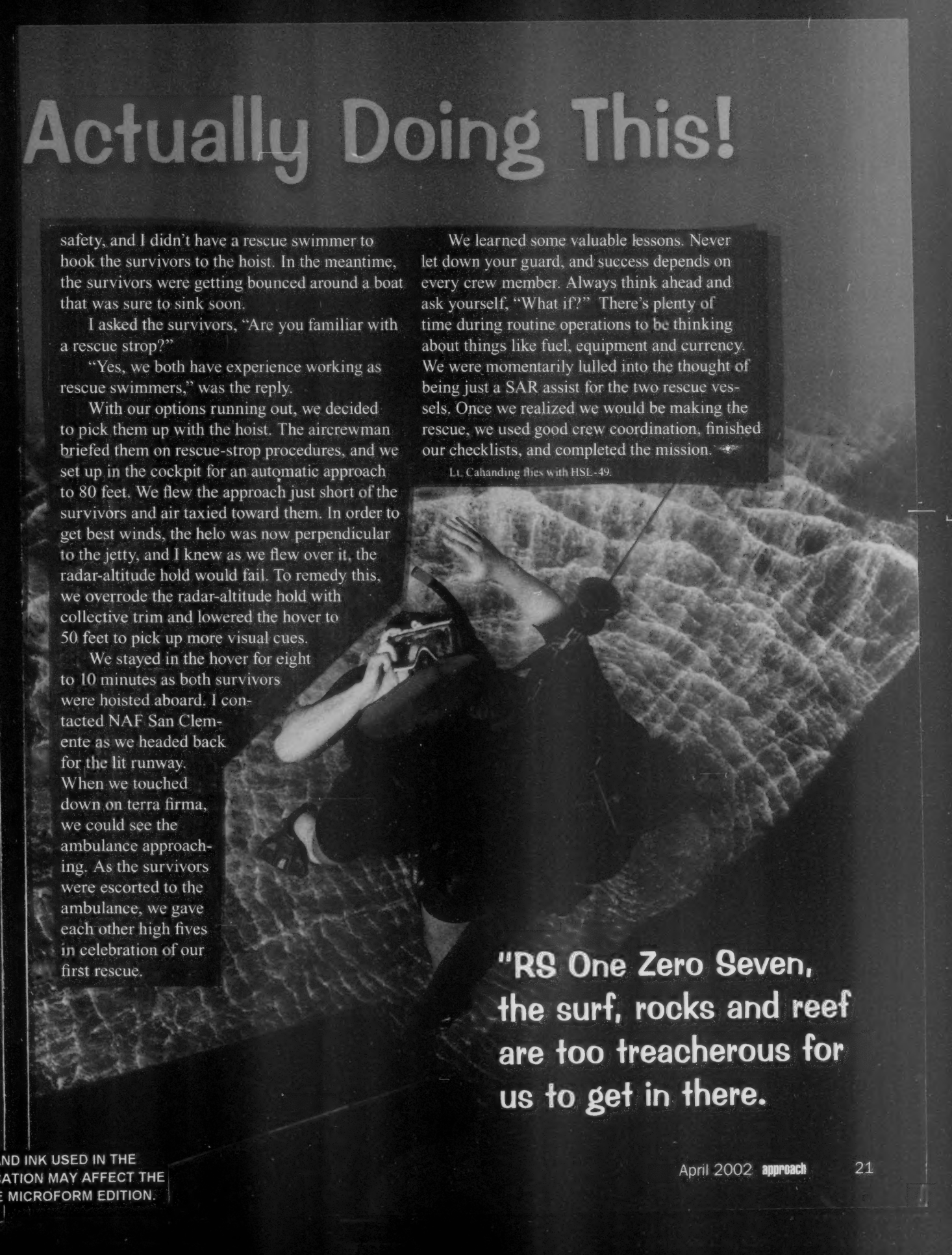
"Yes, we both have experience working as rescue swimmers," was the reply.

With our options running out, we decided to pick them up with the hoist. The aircrewman briefed them on rescue-strop procedures, and we set up in the cockpit for an automatic approach to 80 feet. We flew the approach just short of the survivors and air taxied toward them. In order to get best winds, the helo was now perpendicular to the jetty, and I knew as we flew over it, the radar-altitude hold would fail. To remedy this, we overrode the radar-altitude hold with collective trim and lowered the hover to 50 feet to pick up more visual cues.

We stayed in the hover for eight to 10 minutes as both survivors were hoisted aboard. I contacted NAF San Clemente as we headed back for the lit runway. When we touched down on terra firma, we could see the ambulance approaching. As the survivors were escorted to the ambulance, we gave each other high fives in celebration of our first rescue.

We learned some valuable lessons. Never let down your guard, and success depends on every crew member. Always think ahead and ask yourself, "What if?" There's plenty of time during routine operations to be thinking about things like fuel, equipment and currency. We were momentarily lulled into the thought of being just a SAR assist for the two rescue vessels. Once we realized we would be making the rescue, we used good crew coordination, finished our checklists, and completed the mission.

Lt. Cahanding flies with HSL-49.



"RS One Zero Seven, the surf, rocks and reef are too treacherous for us to get in there.

ND INK USED IN THE
ATION MAY AFFECT THE
E MICROFORM EDITION.

Aircraft Retrieval

By Lt. Jamie Vega

was six months through my nugget cruise as a PQM in the SH-60F and HH-60H. My HAC and I were scheduled for a mid-cycle, cold-go launch on a night plane-guard flight. We preflighted in the helo-hole before dark, and we sat in the aircraft waiting for the pointy-nosed fellas to land. True to the previous months of cruise and workups, the recovery went long, and our launch was pushed to the next cycle.

We finally were towed onto the spot, an hour late, and started going through our normal checklist procedures. I was the rightseater, and my HAC copilot was in charge of the checklists. The pressure to get through the checklists and not bust the launch was upon us, but I felt we were proceeding at a normal and safe pace until we got to the backup tail-rotor check. The checklist calls for the backup servo to come on and pick up the tail-rotor hydraulics within a half-second. This, of course, did not happen. On the first try it took about a second and a half for the back-up pump to come on, and, when it did, the AFCS system went off-line. We tried again. This time, the test took three seconds, and the AFCS dropped again. We called in a troubleshooter who said it was a bad pressure switch and that "We were good to go, just gripe it when you get back." Can you hear the warning bells starting to go off in your head?

We continued through the checklist and tried again before launching with the same results. The HAC said the system just was warming up, and the pressure switch was likely the culprit. Seemed reasonable to me, but we still decided to get one last opinion from the flight-deck QA rep. He came in, and we did the check one more time. Three seconds passed with no signs of the aircraft warming up. The QA rep, one of the more senior and well-trusted maintainers in the squadron, said the same thing as the earlier trouble-shooter, "Bad pressure switch, up gripe, go flying."

All the extra checks had taken time, and we needed to make a quick decision whether to take the bird flying or bust the launch. After the QA rep left the rotor arc, there were a couple seconds of silence broken only by my question, "QA says its good to go, troubleshooters say it's good to go,

the checklist states it should take half a second; you wanna take it?"

The HAC took a couple of seconds and said, "Let's do it!"

We finished the takeoff checklist and called tower to let boss know we were good to go, except for an S-3 parked directly in front of us.

Keep in mind it now was black as black gets. The boss asked over the radio if we would accept a sidestep on the go. If not, we had to wait until the S-3 was out of the way. The HAC made the call to wait. Five minutes later, the Hoover was out of the way, and we were ready to go. I took one last glance at the same instrument and caution panel I had been staring at for the last five minutes. Everything looked good. Over an hour late, but we were going flying.

As I rolled out at 90 knots and 300 feet, my HAC proceeded to go through the after-takeoff checks. I hadn't put on my NVGs yet. It is standard practice for the right seat pilot to swap controls when the after-takeoff checklist is complete and then put the goggles on. I finally was glad to be off the deck and in the air.

As I waited for the go-ahead call from my copilot, meaning the after-takeoff checklist was complete, everything, and I mean everything, went dark. A few dim blue lights partially illuminated my instrument panel. I immediately turned on my lip light and focused it on the baro-altimeter. I took least two glances at my radalt before I realized it was not working. I also took a couple of quick glances at my attitude indicator but found it was shot as well. Within a second or two, which seemed like an eternity, I was on a for-real, no-kidding, partial-panel scan. My eyes darted from the baro-altimeter to the airspeed indicator, and I then cross-checked the turn needle. With our altitude at 300 feet, my main focus was on the baro-altimeter—an instrument we usually do not keep in our scan.

Another three seconds passed. I could hear the HAC furiously flipping switches, as I became more aware of our predicament. For some reason, we were in the middle of a complete AC-power failure. We had no lights, no AFCS, no radalt hold, but a whole lot of pucker factor. I came over the ICS, using my foot switch, because the

VOX also was dead. I was partial panel and started calling out the instruments, "Baro-altimeter, airspeed, baro-altimeter, turn needle, baro-altimeter, airspeed, VSI." I peeked at the HAC, and he frantically worked checklists, liplights, flashlights, and switches.

After what seemed like an eternity, the lights finally came on. We still were flying and close to 300 feet. The HAC reached over and reengaged the AFCS and radalt. I took my first breath and removed the seat cushion I had just sucked up.

If I had been more on the ball before we took off, I would not have taken the troubleshooter's advice.

With the power back on, I asked the HAC what had happened. He said that when he turned off the APU (a normal part of the after-takeoff checklist on a cold-go), the generators did not take the load. The switch fiddling I had heard was the HAC trying to restart the APU without dumping the accumulator.

We checked in with strike and relayed we were down nights. Then boss came over tower frequency and told us to charlie spot 4. The fun wasn't over yet. We asked for a CCA because the boss apparently wanted us to shoot a visual. We got the CCA, but upon check in with approach, we were told to expect a sidestep because the fantail was clobbered. Great! The seat cushion resumed its previous position.

I transferred controls to the HAC and donned my goggles for what promised to be a fun approach. The approach to a sidestep is not exactly a helo bubba's preferred method of getting back on deck. It requires the right seat pilot to transition from flying an instrument approach to a visual approach, while the left seat pilot has no visual reference to the deck. Then we slide right, and at night without the proper deck lighting (blue lights on), your goggles bloom, just as you try to set the aircraft down. We requested the blue lights, but the deck couldn't accommodate us because of a re-spot.

I flew the approach, picked up the side of the ship, flew alongside, and then started to slide right. Just as I came over the spot, the goggles bloomed, and I barely could make out the LSE in front of us. I landed on his signals without having any real idea where the deck was.

Once on deck, we shut down and headed for our debrief.

Systems knowledge is key. If I had been more on the ball before we took off, I would not have taken the troubleshooter's advice. The checklist calls for half a second for a reason. I should have remembered why it was taking three seconds to switch. Without the generators on, the backup pump takes approximately three seconds to energize the servo. Our generators had not been on, or at least they had not taken the load properly. The HAC swears they were on, but I specifically remember looking over the caution panel before launching. There were no lights to indicate that the generators weren't on. Later, maintenance and two FCF pilots spun up the aircraft and could not duplicate the problem on deck. The helo has not had any problems since; I couldn't tell you if the switches were on or not.

The second lesson is about being a better copilot. When I turned to the HAC before takeoff and asked him what he wanted to do, I put all the decision-making into his lap. I had not formulated a plan myself. I just relied on the troubleshooters, the QA rep, and my HAC. The helo is a dual-piloted aircraft for a reason. In this instance, I made it into a single decision-making process, foisting all my worries and concerns onto the HAC. I trusted he would make the right choice without my input.

Finally, I learned that all the training I had in flight school and at the RAG was worth it. This was my first real emergency. I easily could have put four people in the water that night, but the hours of training kicked in, and solid procedures were followed. I would have preferred a normal landing, but I had done the sidestep procedure several times and felt semi-comfortable doing it again.

All in all, the flight has taught me a lot about ORM, the pressure to get the X, and about being a good copilot. I am a better pilot for it; now I just wish I could get this damn seat cushion to come out.

Lt. Vega flies with HS-3.

Turboprop in Afterburner

By Lt. Ray Leung

It was a cloudy day in the Papa areas off the coast of California. My E-2 crew just had finished a COMPTUEX combat search-and-rescue and battle-group air-defense (BGAD) mission. As the combat-information-center officer, I was in the back of the Hawkeye, and it had been a low-tasking mission.

After my passdown on J-Voice to the oncoming E-2, I reported mission-complete to the pilot and copilot. Our skipper, in the pilot seat, led us back to the overhead stack for a mid-afternoon Case I recovery. There were only two aircraft below us when we reached the stack. When we arrived at the initial, our pilot spotted two Hornets returning from their BGAD mission.

The next thing we heard on the radio was the air boss calling, "Six Zero Zero, depart and re-enter." I was disappointed because that cut into my chow time. The pilots flew out to seven miles, climbed to 5,000 feet, and re-entered the overhead stack, awaiting instructions from the air boss. Like a bee buzzing over his beehive, we waited.

With more Hornets showing up, we began to hawk fuel states. Then 30 minutes later, the air boss charlied us with only 2,500 pounds of fuel in our tanks. We pushed and hit our numbers, three miles and 800 feet at the initial. When we were directly overhead the carrier, I felt a strong thud, followed by violent vibrations, throughout the aircraft. My air control officer immediately shouted, "Our right engine is on fire!"

In the meantime, the LSO called over the tower frequency, "Six Zero Zero, your right engine is spitting out flames!" I snapped toward that general direction and saw an engine fire—something no one ever wants to see in the back of an E-2. Our starboard engine looked like a Roman candle. It was as though the turbo-prop had kicked into fifth-stage afterburner, except the flame was bright orange instead of Bunsen-burner blue.

My skipper completed the boldface NATOPS items, pulled the starboard T-handle, and pushed the fire bottle, extinguishing the fire. The propeller feathered without a hitch.

Many questions went through my mind. What if the left engine also decides to quit? What if we miss the wires? Am I ready to go swimming in the Pacific Ocean? While many thoughts flew through my already saturated brain, we were downwind and ready to come aboard. We descended to 600 feet at the 180, on speed, and then to 450 feet at the 90, on speed. After a few more sugar calls from our copilot, we landed with an OK underline.

With the hook up and wings still folding, our wounded Hawkeye taxied clear of the landing area and parked behind the island. After a high-speed shutdown and inspection, maintenance found the engine FODed itself because of a compressor-blade failure.

Lt. Leung flies with VAW-117.

Crew Resource Management

Situational Awareness

Assertiveness

Decision Making

Leadership

Communication

Adaptability/Flexibility

Mission Analysis

Radio

By LtCol. Peyton DeHart, USMCR

It was a dark and stormy night *[Only a frequent contributor like LtCol. DeHart gets away with an opening line like this.—Ed.]* as we were being cleared for an approach into Texarcana. We descended through a thick layer of clouds. We occasionally peered into the inky blackness, left and right, to check the rime ice on the wings' leading edge.

Houston Center broke the routine by asking if we were a military flight. Practicing my response over the ICS, I said to the copilot, "It wasn't us, we weren't there, you can't prove it!" But despite the rehearsal, my answer to the control agency came out as a rather tentative, "Yes, a C-12 King Air, why?"

"I wonder if you could help me out here," he said. "I've got an aircraft, actual IFR, with a complete loss of electrical power. His radio is too weak for me to pick up now, and I wonder if you could radio relay for me."

"Certainly," I replied.

Center gave us a vector to an area 40 miles away; then they broadcast in the blind to the distressed pilot that help was on the way. I heard no reply. I tried the call sign myself. No response. I tried again with the radio squelch off. Squeezing between the drone of the props, the faintest of replies came through. He was either using a low-power hand-held radio, or his remaining aircraft-battery reserve was about gone. We relayed a vector that would get him to VFR and a descent to 3,000 feet—the minimum safe altitude in that area.

The pilot of the other plane sounded collected, much more so than I would have been at night, actual IFR, with only a turn needle, ball and wet compass, illuminated by flashlight. Center fed a constant stream of information on what airports were reporting VFR conditions within a 100-mile radius. We dutifully passed them on. It occurred to me this was done as much for information's sake as to keep a voice on the radio

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Relay

Photo-composite by Patricia Eaton

to reassure the troubled pilot he wasn't alone in the air. The minutes rolled by. I was aware of the passing time because the UC-12B does not have a squelch-off switch or function on the radio. There is a small button on the face of the instrument panel to disable squelch, mostly used as a volume-tester for our headsets. After 10 minutes of keeping that button mashed in, my forefinger was numb; after half an hour, the other fingers had their turn.

Center asked if we could see the other aircraft since we had arrived in its vicinity. I replied it wasn't likely because it was pitch dark, he didn't have lights, and I, too, still was actual IFR.

The other pilot then reported he had broken out under a low ceiling. He was over a vast, dark swamp. We passed a vector to the nearest airport, and he headed that way until we heard the rather ominous transmission, "I can't go in that direction any longer. If I do, I'll punch into the clouds again, and I'm not doing that."

Center gave me a new steer to pass. I did so, and it seemed a bit more promising. Clouds at my level started to break up, and we saw the ground for increasing stretches of time. Center asked us to escort the airplane, once we saw it, to an airport. I told Center it still was unlikely I would see a plane without lights, but I'd try to make sure he could see me.

Turning to my copilot, I said, "Let's turn on the landing lights."

"The gear needs to be down for the landing lights to come on."

"Oh, yeah. Well, lower the gear."

"Too fast. We're doing 220."

"Well, slow down."

The power levers were pulled back to the stops. The other pilot said he was doing 90 knots, so we needed to slow down considerably. Eventually, we dropped the gear, turned on the landing lights, and flew into a clear sucker big enough to orbit inside of, making our plane easier to see.

Good plan. It worked!

"I've got the aircraft circling with lights on in sight," the other pilot said.

We peered into the dark, trying to catch a glimpse of the other airplane. If we did, we could depart our altitude, descend into clearer air, and guide the other airplane into a safe airport.

Speaking of "departure," that's what was about to happen in two seconds if we didn't honor the stall-warning horn that now blared at us. We shoved the power levers forward from their idle position and stabilized in a nice slow turn.

"I wonder if you could help me out here," he said. "I've got an aircraft, actual IFR, with a complete loss of electrical power."

Center gave us a vector to the closest airport, and we turned toward it, leading the distressed aircraft like a beacon in the sky. As we relayed the runway length of 3,000 feet and width of 50 feet, the other pilot replied that since he didn't have a landing light, he wanted a runway wider than 50 feet. Center gave us another vector to a more distant airport with a 150-foot-wide strip. Ten minutes later, we were overhead that field and circling in order to relieve the other pilot from having to worry about doing the navigation. He progressively called us when he was 10 miles out, on right base and then safely on deck. We never saw him.

Center made some closing remarks on the order of, "Thanks for spending the time to help out."

I replied, "Hey, it was government gas. We're just glad to be of service."

The pilot on the ground chimed in, "Thanks, you were a big help to me."

My response: "You made a very professional set of decisions…from not reentering IFR, to refusing a runway that was narrower than you wanted, even though it may have gotten you on the ground earlier. Good flying, guy."

With that, we turned off the extra lights, sucked up the gear, and headed back to Texarcana to begin the approach we had intended to shoot an hour earlier.

LtCol. DeHart is with the 4th Marine Aircraft Wing, FMF.

Analyst Comments

The fact that the cavalry didn't charge to the rescue made for a mishap-free ending to this story. Inventive communication and coordination, sound decision-making, and adaptability were demonstrated here. This C-12 aircrew initially developed good situational awareness (SA) and then adapted to an unbriefed SAR mission.

How did the SA picture develop in CRM terms? First, all available resources were used. More than a functional set of "Mark I, Mod 0" aviator eyeballs were required to develop good SA on this mostly cloudy night. ATC formed the backbone of a three-way communication link between an aircraft with crippled electronics and the C-12 SAR bird. Center provided intercept vectors, relative position, and alternate-runway information. Fortunately, they found a patch of clear sky at just the right time. Maintaining a safe altitude, the C-12 crew communicated its position using landing lights. A great idea as long as you lower the gear below the critical "gear becomes FOD" speed of 90 knots (good-on-ya coordination backup, by the copilot). With each player's SA picture matching reality, the rest of the mission proceeded without a hitch. We have to give the civilian pilot a CRM Bravo Zulu. He made a good decision to reject the first runway offered (Do you see assertiveness here as well?). He took the alternate, a safer runway relative to his predicament (thanks center for supplying this info earlier!), and landed safely. P.S.—We would like a copy of the new C-12 SAR patch when it comes out.

LCdr. Mike Reddix is the CRM program representative at the Naval Safety Center.

By Lt. Dustin Smiley

Strange Noises in the Night

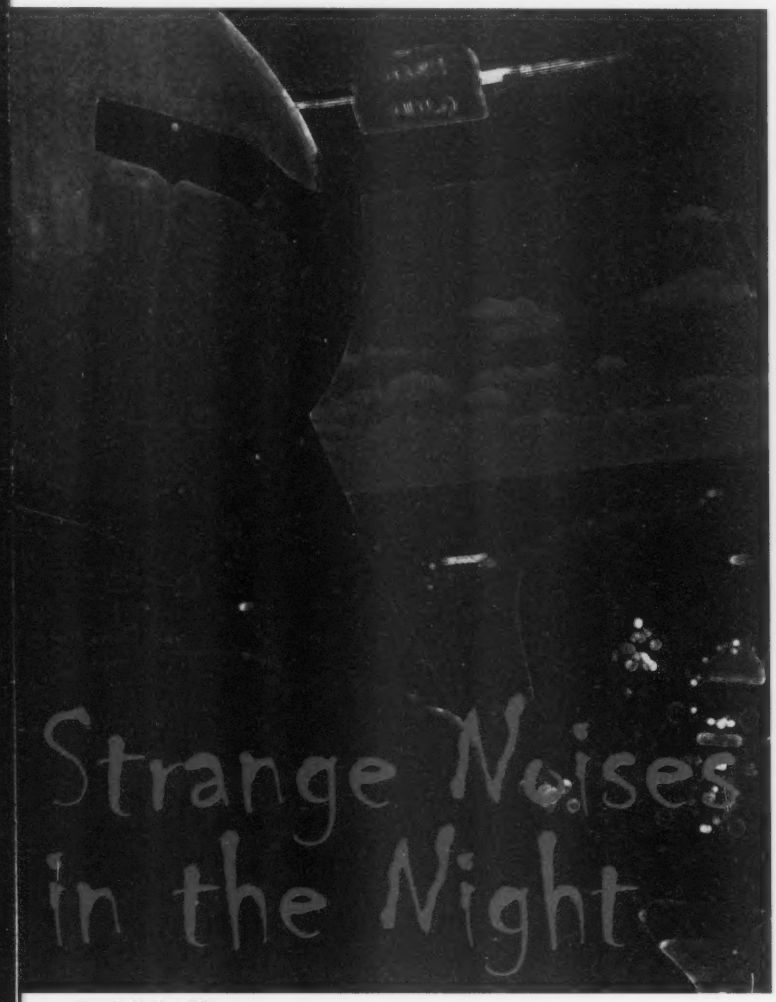


Photo by Matthew J. Thomas
Digitally manipulated by Allen Amen

During COMPTUEX, our squadron sent a detachment to USS *Thorn*, a Spruance-class destroyer, to participate in an international ASW exercise and further efforts in HS- and HSL-integrated operations. As a new pilot with only six months in an operational squadron, I was excited to complete RAST qualifications and to experience the life of our SH-60B brethren firsthand. Filling out the detachment were the squadron's senior JO HAC, an AW1 with over 2,000 hours in the H-60, a junior AW, and a small group of maintenance personnel.

After several days of learning about life aboard the destroyer and daily ULT flights, it was time for the primary ASW exercise. We launched that night from Thorn, ahead of the HSL aircraft, and, after a quick check of our equipment, went to our assigned position to search for the "enemy" submarine. During one of our automatic approaches, our tactical systems operator (TSO), the senior aircrewman, noticed a muffled roaring sound coming from over his head in the aircraft cabin as we pulled into a hover. We departed and discussed what could have caused the sound. In forward flight, the sound subsided. We couldn't feel any restrictions in the flight controls or find any other indications of a problem. The HAC asked if everyone was comfortable flying approaches to determine the origin of the sound. While in a hover, both crewmen described the sound as, "A train running on tracks, with the roar in the background." By holding his ICS microphone up to the cabin overhead, our TSO allowed us to hear the noise he had been telling us about. We soon agreed the unidentified condition warranted returning to the ship for an inspection by our maintenance personnel before continuing into the next exercise.

After landing, a troubleshooter climbed the aircraft to assess our status and came back down with a grim look on his face. Part of the No. 2 engine firewall had separated and had been filing down the rotating swashplate next to where the pitch-change rods attach. The wear was well beyond limits. That ended our flying that night, and we weren't able to continue the exercise around which our detachment had been planned. We were disappointed, but, at the same time, were relieved since we hadn't known the reason for that ominous sound.

Our maintainers, assisted by the HSL maintainers, proved the viability of major aircraft maintenance in a small hangar. Replacing the swashplate required removing all four main-rotor blades and the main-rotor head, something our HSL friends hadn't attempted before.

Listen to each other's concerns and draw upon the experience of everyone in the aircraft. We decided to end a flight early with a condition that didn't fall into a convenient NATOPS description of an emergency. It's unclear how much more wear a longer flight would have caused to our swashplate. With the rate of erosion caused by the filing of the firewall, our decision not to fly the second leg of our mission might have prevented a loss of control and a disaster.

Lt. Smiley flies with the HS-3 Tridents.

It Finally Clicked!

By Lt. Seth C. Gagliardi

We left North Island Naval Air Station on a night and NVD-requalification mission off of the Southern California and Mexican coast. The flight turned out to be anything but standard. Flying H-46s off San Diego is usually a relaxed event, the weather is reliable, and there are plenty geographical landmarks and lights. For an H2P, who had been around the squadron for a while, night and NVD flights off the coast were a regular occurrence (especially since I was slated for a 'Gator cruise).

Tonight, we had the added benefit of company traffic going with us; the two aircraft would fly loose form out to the ship and take turns using the deck for our requal events.

At the brief, we discussed several issues that concerned us. We would be low-light all night, and the weather was clear, with a ceiling of 800 feet. The ship, while still within our mandated range for flights from shore, was farther out than usual, around 70 to 80 miles.

We received pigeons to the ship before launch and began the flight unaided. The ship was off the coast of Mexico, farther south than normal. It was working its way north at a snail's pace toward W-291, our operating area. We were able to reach Beaver control and requested flight following. As we flew closer to the ship, our altitude limitations, because of weather, would make it hard to communicate with Beaver control. We set a bingo and kept our primary TACAN dialed up (our reference for the pigeons we had received).

The frequency for ship's center was set in our bottom radio, and we tried to contact them. We still were no-joy on the ship when TACAN information from the primary station was lost. We set in the ship's TACAN channel, but it wouldn't lock on. All attempts to check with Beaver control for updated pigeons were unsuccessful. As predicted, our limited altitude hampered our ability to maintain communications. With 15 to 20 minutes before our bingo, we advised our playmate to dial up the squadron's back-door frequency. The two HACs decided to press on until we reached bingo, and, if we still hadn't established comms or a TACAN lock, we would turn around.

After 10 minutes, the ship's TACAN began to come in; the DME showed first; and the spinning needle eventually settled down to indicate the ship was 20 degrees farther west. We re-evaluated our fuel situation and decided to con-

H-46 photo by PHAN Alisha Clay
Background photo by Evelyn Odango
Photo-composite by Patricia Eaton

tinue. We told the second aircraft we had the ship's TACAN and again attempted to contact the ship. After two minutes, the ship responded, and told us we would have a green deck on arrival and provided their numbers. We continued inbound, landed and fueled.

After fueling, we coordinated flight operations with the ship. The scenarios would progress from unaided to aided operations. Although we had encountered a variety of minor problems on the flight out (loss of comms with Beaver control, no reliable TACAN for about 10 to 15 minutes, and the ship's course being more northwest than north), we concentrated more on our immediate training. However, we failed to talk about how those factors might affect our return flight. I was one of three pilots requaling and wasn't scheduled to be in the cockpit for the return trip, but my failure to think about possible contingencies almost came back to bite me.

We dropped off the two other pilots, who had been in the back of the H-46, so they could relax in the wardroom. The plan was to conduct a night vertrep to the aft spot of the LPD, while the other aircraft would cycle in to the forward spot for DLQs. However, the ship did not yet have a staged load, so we took turns on the forward spot and waited to break off for the night vertrep. There were no problems throughout the training, and we soon began the night vertrep. Once that was completed, we advised the ship and our other aircraft we would be off the ship's starboard side, working low and doing doppler approaches. The horizon was nearly non-existent, but the HAC and I had flown together several times, and we felt comfortable.

After knocking out the required number of dopplers, we climbed out and decided it was time to refuel and swap out pilots. They then could get on with their unaided work before both aircraft started aided ops. We had 50 minutes of gas left and advised tower we were inbound for a hot pump and crew swap. Just after they acknowledged us, the ship disappeared. Nothing. No lights, other than our partner's anti-smacks (they had been the port side of our now non-existent ship, wrapping up their low work). We attempted to contact the ship, no luck. Then we called the other aircraft and asked if they saw or were able to contact the ship—no luck on their part, either.

We began to evaluate our options. The last time we had checked, North Island was 80 miles away. I hoped we now were closer, but the ship had been heading west as well as north, so there was no guarantee on that. We had no pigeons, no comms with the ship or Beaver control, no ship's TACAN, and no lock on any of the shore stations. The one divert field that usually could be relied on, San Clemente Island, was farther away than North Island because of the southern position of the ship. The only GPS available were the handhelds we carried, and they are known to have trouble acquiring signals in flight. To get them to work, you must hold them out the cockpit window at an angle and hope they pick up on signals that come in under the rotor arc. It seems the rotor arc tends to obscure, or, at least delay, any reliable input.

We decided to goggle up and at least give ourselves with some assurance the ship still existed. Sure enough, they were DIW, completely blacked out, and landing there still was a better option than trying to get to North Island with roughly 40 to 45 minutes of fuel left. We discussed this with the other aircrew, and came to the same conclusion. Landing goggled on a DIW ship wasn't something any of us wanted to do, but it seemed better than taking our chances with a dead-reckoning return to North Island. Since we had less fuel than the other aircraft, we were elected to attempt the first landing. After burning down fuel, we flew by the ship, close abeam. They were pitching and rolling outside landing limits (normal is 3-degrees pitch and 5-degrees roll; the ship was experiencing roughly 5-to 8-degrees pitch and 10-to 13-degrees roll).

Tower contacted us when we had 25 minutes of fuel left. The ship had experienced an engineering casualty and had pumped a significant amount of hot oil over the engine room. They were unable to get underway for our landings, but they would have power to the lights within a few minutes. Sure enough, their flight deck lit up just after the call, a very welcome sight. We degoggled and prepared for our landing. Surprisingly, the HAC left me at the controls.

Rolling onto final, I intermittently lost sight of the flight deck as the ship rolled toward and away from us. This was a very disorienting situation, not quite a case of vertigo, but I was unable to reliably judge altitude and closure rate, and waved off.

Landing goggled on a DIW ship wasn't something any of us wanted to do.

I decided on my next approach to come in higher than normal but failed to inform the HAC of my decision, resulting in a second waveoff at his behest. I explained my plan to come in higher than normal, on an almost precision-approach profile. He told me he didn't like that plan (yet) and would take the controls on the next attempt.

His first attempt ended the same way as my initial try; since he also had trouble gauging relative altitude and closure rate. He then made the call that coming in on a higher than normal profile was our best bet. We advised the aircrewmen we would be in a high hover over the ship, and we would depend on their calls to the deck even more than usual.

The HAC made the approach and began to come down with the crewmen's calls, but, because of the extreme pitch and roll, we waffled over the deck as the spot moved out from under us. We finally came down—hard! The brakes kicked off, and we began to roll forward toward the edge of the flight deck. The HAC and I raced for the brakes, and the LSE ran to avoid being hit.

We finally were chocked and chained when the other H-46 called inbound, but we quickly advised them to wait until we had fueled and launched. Having them attempt what we had just gone through, while we were spinning and fueling, seemed like a recipe for disaster. They agreed to wait, but just then, the tower told us the ship had regained propulsion, and the pitch and roll would be coming within limits momentarily. Fortunately, they would be spared the sweatex that we just had endured.

The rest of the night was uneventful, and we returned to North Island without further complications. We were fortunate the ship was able to regain some power and to provide us with a lighted flight deck. But, we had ignored several things in the course of our training. We failed to regularly get updated pigeons to North Island, or even upon check-in with the ship. We failed to monitor our fuel to make sure there was enough to get back to North Island, if we were unable to land on the ship (not always a possibility, but in this instance, it was). We had not sought other ships in the area that we could use as alternates.

Throughout flight school and in the RAG, instructors talked about being able to see a student "click." Seeing them finally get the principle of hovering or vertrep. As a student you can feel yourself begin to "get it" sometimes. This was my first experience in a fleet squadron where I had that feeling. I had learned the hard way to think out contingencies that may exist outside the aircraft, and I won't forget that lesson.

Lt. Gagliardi flies with HC-11.

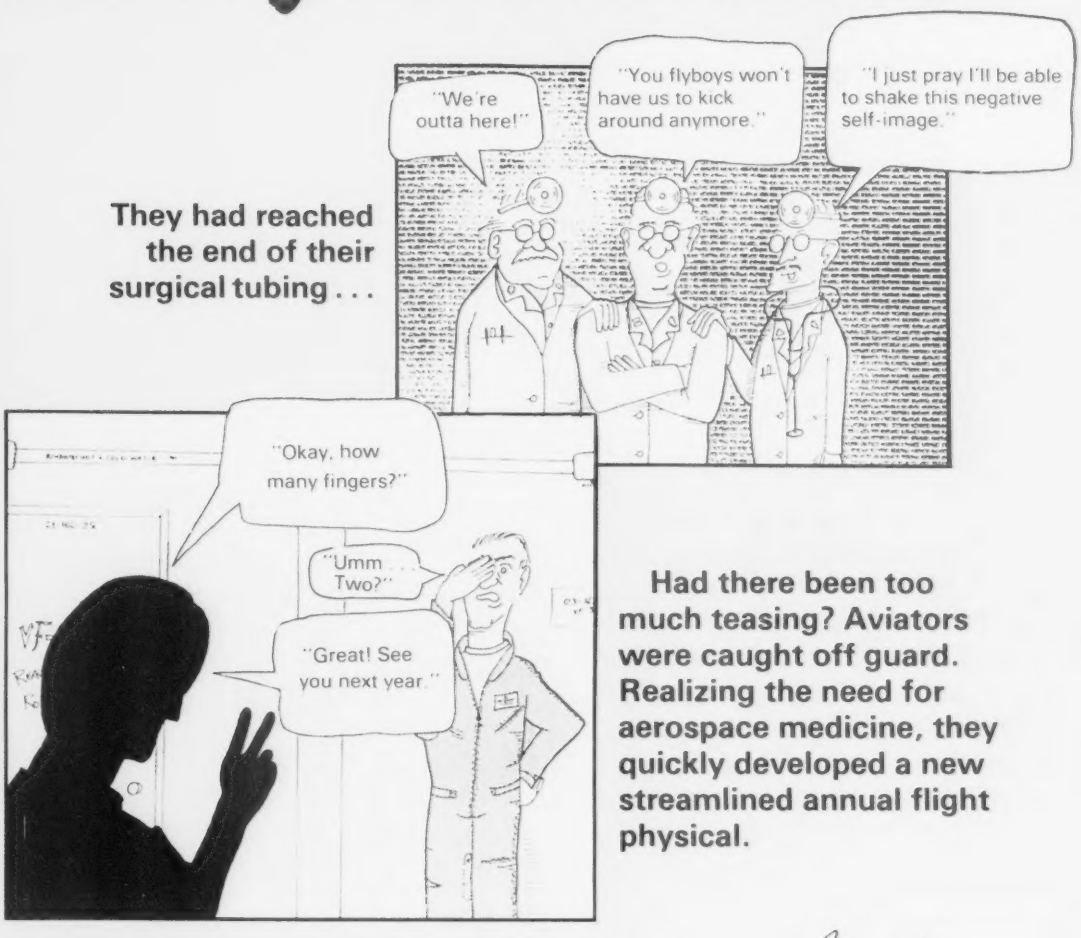
Classic

BROWNSHOES IN ACTION COMIX

"The kind real aviators like"
By Lt. Ward Carroll

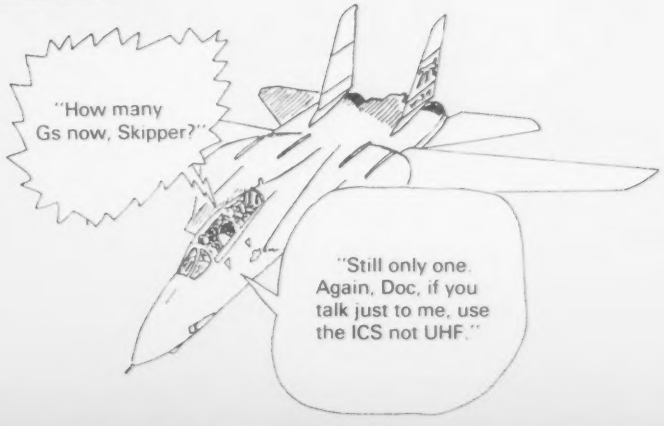
The Day the Docs Walked (almost)

They had reached the end of their surgical tubing . . .


"We're outta here!"
"You flyboys won't have us to kick around anymore."
"I just pray I'll be able to shake this negative self-image."
"Okay, how many fingers?"
"Umm . . . Two?"
"Great! See you next year."

Had there been too much teasing? Aviators were caught off guard. Realizing the need for aerospace medicine, they quickly developed a new streamlined annual flight physical.

Fortunately, the potentially disastrous situation was remedied when skeds writers throughout the fleet put their flight surgeons on the schedule the following day . . .



Ready Room Gouge

In the ongoing battle between objects made of aluminum going hundreds of miles per hour and the ground going zero miles per hour, the ground has yet to lose.

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F/A-18 photo by PH2 Shane McCoy
Photo-composite by Patricia Eaton